

IN THE CLAIMS

1. (Currently Amended) A method comprising:
receiving a group of bit plane data having a group of set values;
identifying a group of most significant set bit (MSB) positions of the group of
set values within the group of bit plane data; and
for each of the group of MSB positions, encoding a run of non-set values
preceding each of the group of MSB positions.
2. (Original) The method of claim 1 further comprising encoding a second run of
non-set values with an ending symbol.
3. (Original) The method of claim 1 further comprising encoding a group of signs
corresponding to the group of set values.
4. (Currently Amended) The method of claim 1 wherein the group of MSB
positions are identified without non-loop related conditional branches.
5. (Currently Amended) The method of claim 4 wherein identifying the group of
MSB positions without non-loop related conditional branches comprises:
performing a logic operation of each value in the group of bit plane data; and
tracking the group of MSB positions with a result of the logic operation.
6. (Currently Amended) The method of claim 4 wherein the identifying the group
of MSB positions without non-loop related conditional branches comprises:

performing a logic operation of each value in the group of bit plane data;
setting a flag to a result of the logic operation; and
tracking the group of MSB positions using a conditional instruction with the
flag.

7. (Currently Amended) A method comprising:
loading a group of bit plane data into a buffer, the group of bit plane data
having a group of one or more set bits;
identifying a position of a first set bit in the buffer without non-loop related
conditional branching;
encoding a run of non-set bits preceding the position; and
shifting the run of non-set bits and the first set bit out of the buffer.
8. (Original) The method of claim 7 further comprising encoding a second run of
set values with an ending symbol.
9. (Original) The method of claim 7 further comprising encoding a sign bit
corresponding to the first set bit at the position in a second buffer.
10. (Currently Amended) The method of claim 7 wherein loading [[a]] the group of
bit plane data into the buffer comprises:
loading a group of source data into a first buffer, the group of source data
including the group of bit plane data;
loading a mask for a bit-plane into a second buffer;

selecting the group of bit plane data from the group of source data with the mask; and

extracting the group of bit plane data into the buffer.

11. (Currently Amended) The method of claim 7 wherein identifying the first set bit comprises:

shifting each bit of the group of bit plane data out of the buffer;

comparing each shifted bit with a compare bit to determine if each bit is one of the group of set bits;

tracking each of the group of set bits when detected with the comparing; and incrementing a counter for each shifted bit.

12. (Original) The method of claim 7 wherein the first set bit is identified with one or more look-up tables.

13. (Currently Amended) The method of claim 7 further comprising:

identifying multiple positions of first set bits in the buffer without non-loop related conditional branching; and

simultaneously encoding runs of non-set bits preceding the positions.

14. (Currently Amended) An apparatus comprising:

a buffer to host a group of bit plane data having a group of one or more set bits; and

a variable length coding (VLC) module coupled with the memory, the VLC module to identify the group of set bits' positions and to encode each run of non-set bits with respect to the group of set bits' positions.

15. (Original) The apparatus of claim 14 further comprising the VLC module to encode a second run of non-set bits with an ending symbol.

16. (Original) The apparatus of claim 14 further comprising the VLC module to encode a group of sign bits corresponding to the group of set bits.

17. (Original) The apparatus of claim 14 further comprising a group of one or more look-up tables for the VLC module to identify the group of set bits' positions.

18. (Currently Amended) The apparatus of claim 14 wherein the VLC module to identify each of the group of set bits' positions comprises:

for each of the group of set bits,

to load the group of bit plane data into a memory,

to flip all bits of the group of bit plane data,

to set all bits in positions after one of the groups of set bits position to non-set bits, and

to add the set bits in the memory in an adder tree.

19. (Currently Amended) A machine-readable medium that provides instructions, which when executed by a set of processors of one or more processors, cause said group of processors to perform operations comprising:

receiving a group of bit plane data having a group of set values;
identifying a group of most significant set bit (MSB) positions of the group of
set values within the group of bit plane data; and
for each of the group of MSB positions, encoding a run of non-set values
preceding each of the group of MSB positions.

20. (Original) The machine-readable medium of claim 19 further comprising
encoding a second run of non-set values with an ending symbol.
21. (Original) The machine-readable medium of claim 19 further comprising
encoding a group of signs corresponding to the group of set values.
22. (Currently Amended) The machine-readable medium of claim 19 wherein the
group of MSB positions are identified without non-loop related conditional branches.
23. (Currently Amended) The machine-readable medium of claim 22 wherein
identifying the group of MSB positions without non-loop related conditional branches
comprises:
performing a logic operation of each value in the group of bit plane data; and
tracking the group of MSB positions with a result of the logic operation.
24. (Currently Amended) The machine-readable medium of claim 22 wherein the
identifying the group of MSB positions without non-loop related conditional branches
comprises:
performing a logic operation of each value in the group of bit plane data;

setting a flag to a result of the logic operation; and
tracking the group of MSB positions using a conditional instruction with the
flag.

25. (Currently Amended) A machine-readable medium that provides instructions, which when executed by a set of processors of one or more processors, cause said set of processors to perform operations comprising:

loading a group of bit plane data into a buffer, the group of bit plane data
having a group of one or more set bits;
identifying a position of a first set bit in the buffer without non-loop related
conditional branching;
encoding a run of non-set bits preceding the position; and
shifting the run of non-set bits and the first set bit out of the buffer.

26. (Original) The machine-readable medium of claim 25 further comprising
encoding a second run of set values with an ending symbol.

27. (Original) The machine-readable medium of claim 25 further comprising
encoding a sign bit corresponding to the first set bit at the position in a second buffer.

28. (Currently Amended) The machine readable medium of claim 25 wherein
loading ~~[[a]]~~ the group of bit plane data into the buffer comprises:

loading a group of bit plane source data into a first buffer, the group of source
data including the group of bit plane data;
loading a mask for a bit-plane into a second buffer;

selecting the group of bit plane data from the group of source data with the mask; and

extracting the group of bit plane data into the buffer.

29. (Currently Amended) The machine-readable medium of claim 25 wherein identifying the first set bit comprises:

loading the group of bit plane data into a memory;

flipping all bits of the group of bit plane data;

setting all bits after the first zero bit to zero; and

adding the set bits in the second memory in an adder tree, the set bits being one bits.

30. (Original) The machine-readable medium of claim 25 wherein the first set bit is identified with one or more look-up tables.